

TREATMENT OF HIP IMPINGEMENT

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Magic City Sports Medicine Conference 5/15/2021



DISCLOSURES

- No financial disclosures



Recognition: AT Eval

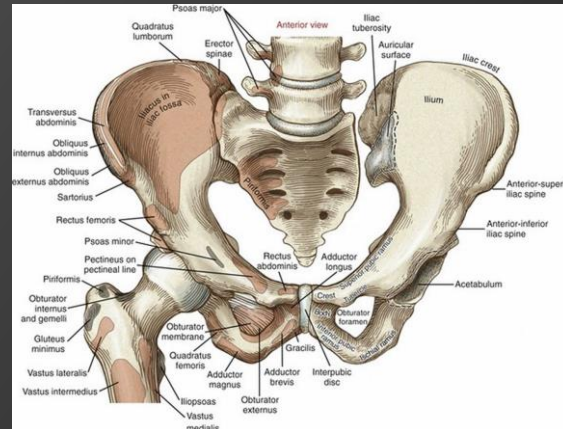
- History

- Observation/Palpation

Inflammation/Deformity/Discoloration

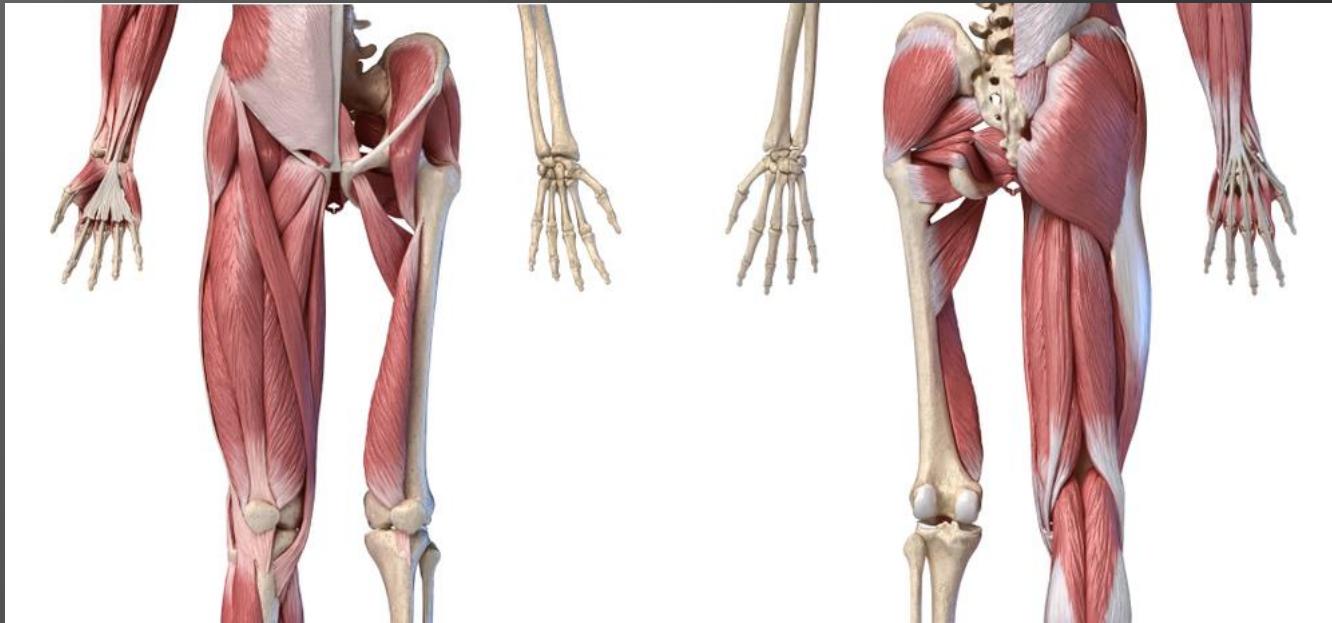
TTP

- Gait Pattern



Physical Exam

- Range of Motion
- Manual Muscle Tests



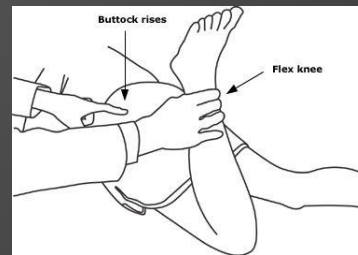
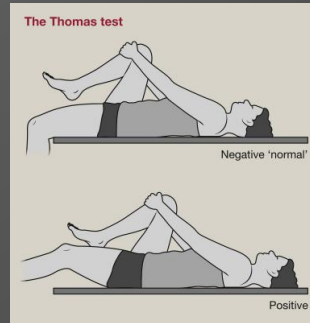
Physical Exam

● Thomas

● Ober's

● Ely's

● Piriformis

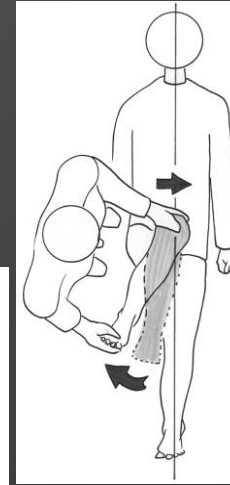


Physical Exam

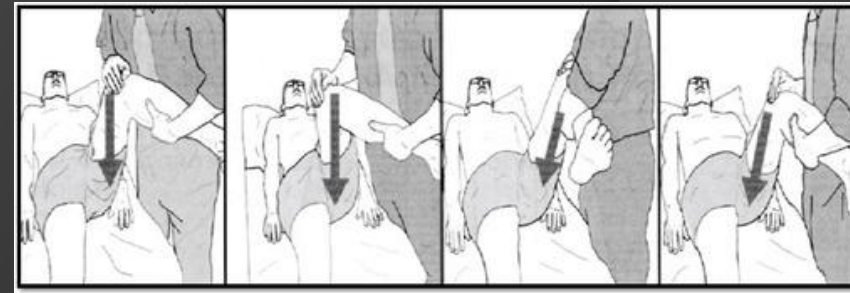
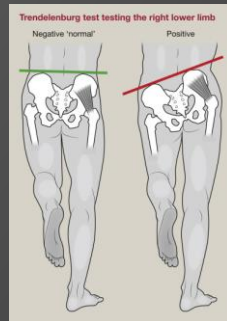
● Impingement Test

● FABER Test

● Scour Test



● Trendelenburg's



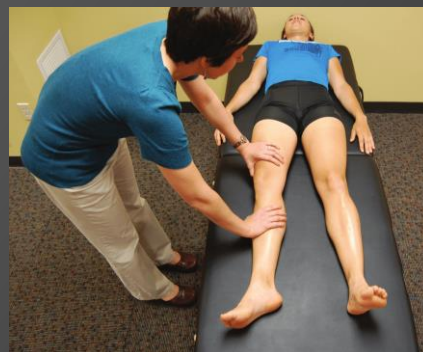
Physical Exam

● Anterior Labral Test



● Posterior Labral Test

● Log Roll



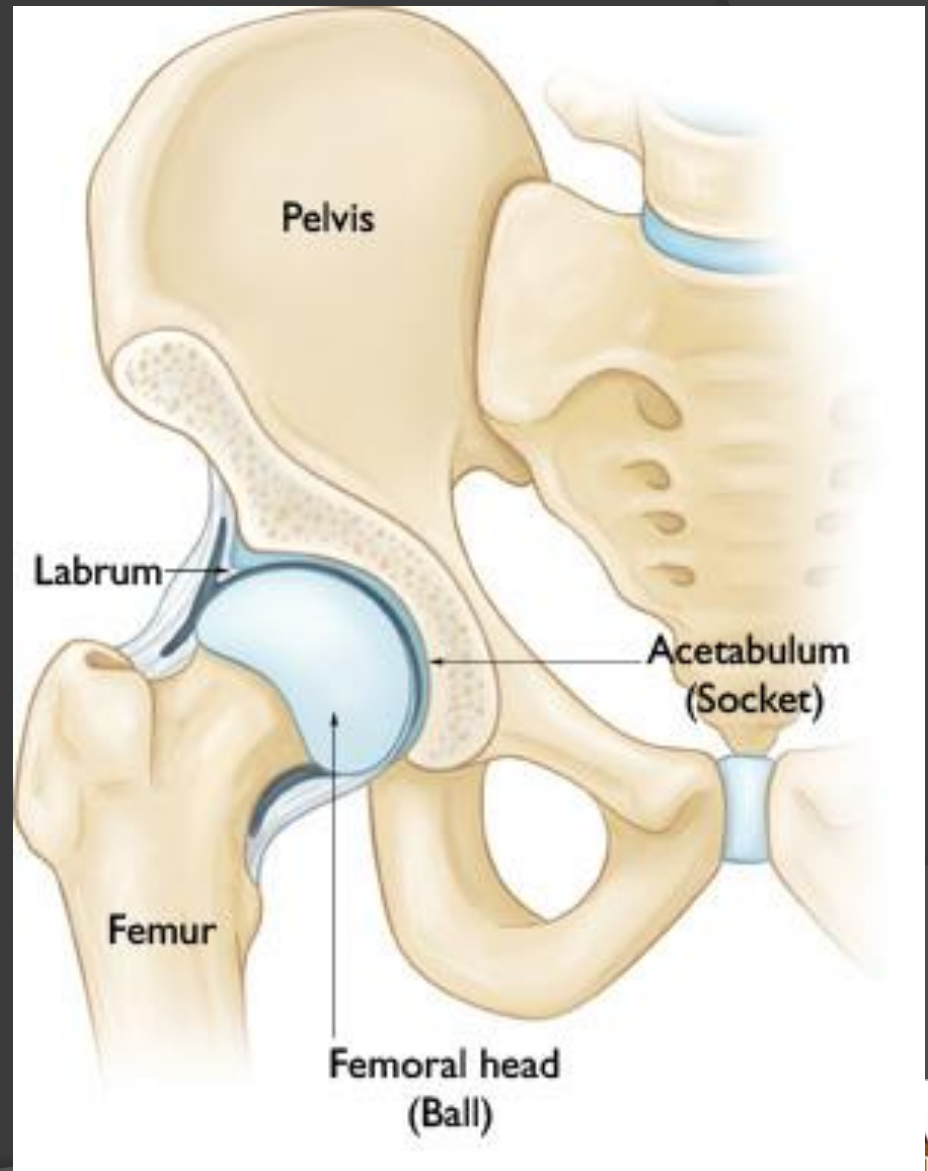
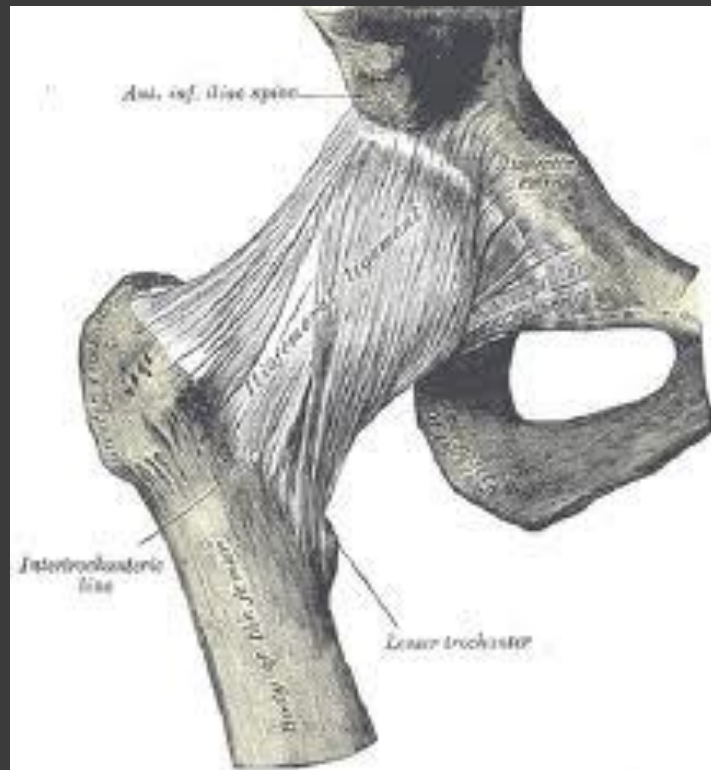
Case – C.H.

- 22 yo male collegiate football player
- 6+ months of anterior hip pain
- Had an injury when he got tangled up with another player in a game, diagnosed with hip flexor strain
 - Worsened throughout season
 - Pain with squatting and with sitting
 - Pain at end of game, limping
- Motrin helps
- Physical exam shows limited internal rotation of his hip and pain with *impingement maneuver*

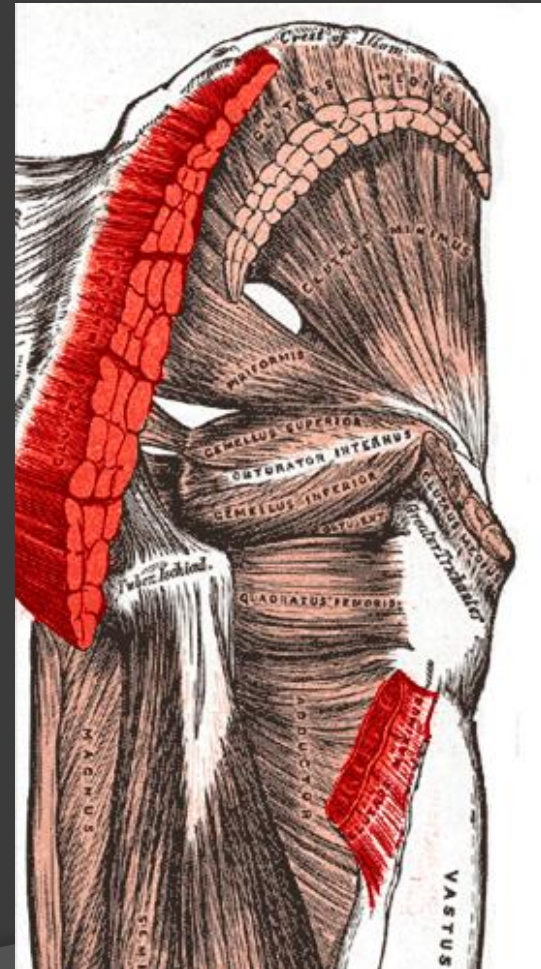
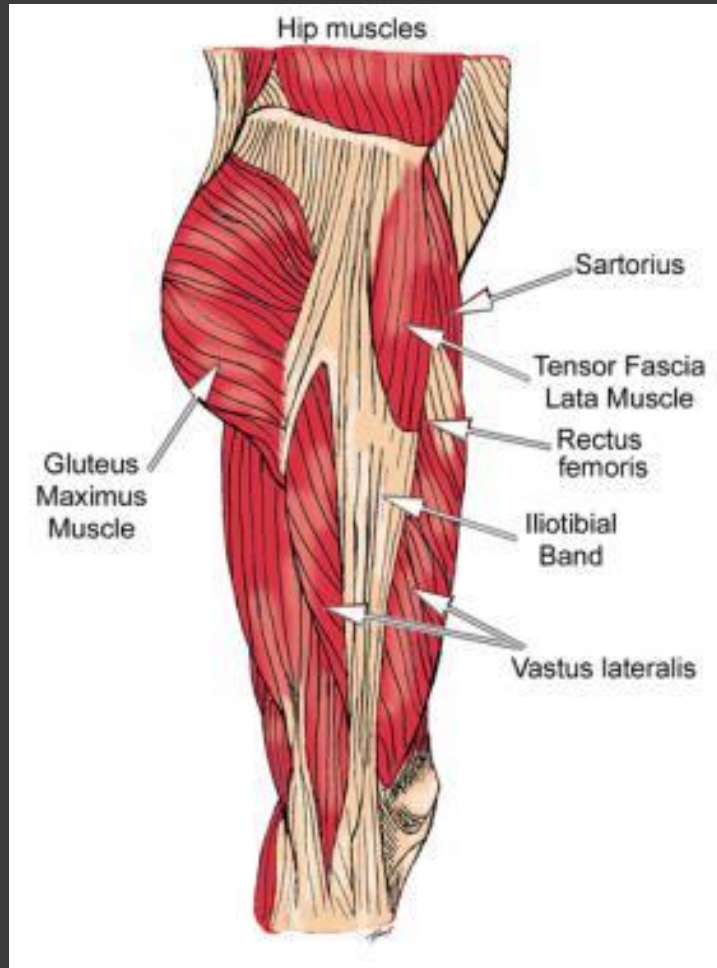
Outline – Athletic Hip Injuries

- ⦿ Anatomy
- ⦿ Workup, Imaging
- ⦿ Treatment
- ⦿ Case

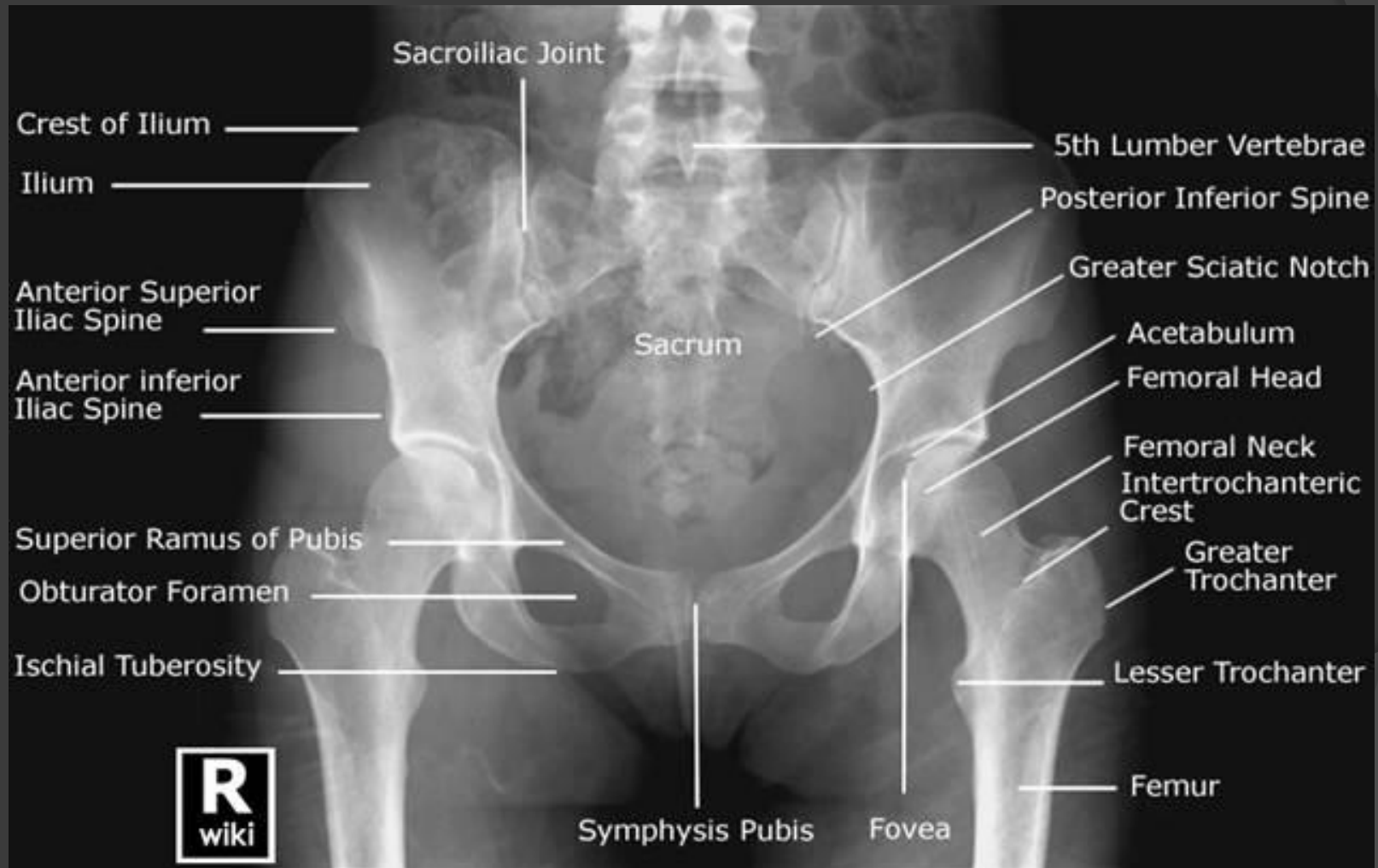
Anatomy



Anatomy



Anatomy



Athletic Hip Injuries

Exhaustive List!

- Adductor strain (groin pull)
- Hip pointer
- Hip flexor strain
- Hamstring injuries
- Impingement (FAI)
- Hip dysplasia
- Sports hernia
- Bony avulsion injuries
- Growth plate injuries (skeletally immature)
- Stress fractures
- Traumatic fractures
- IT band syndrome/bursitis



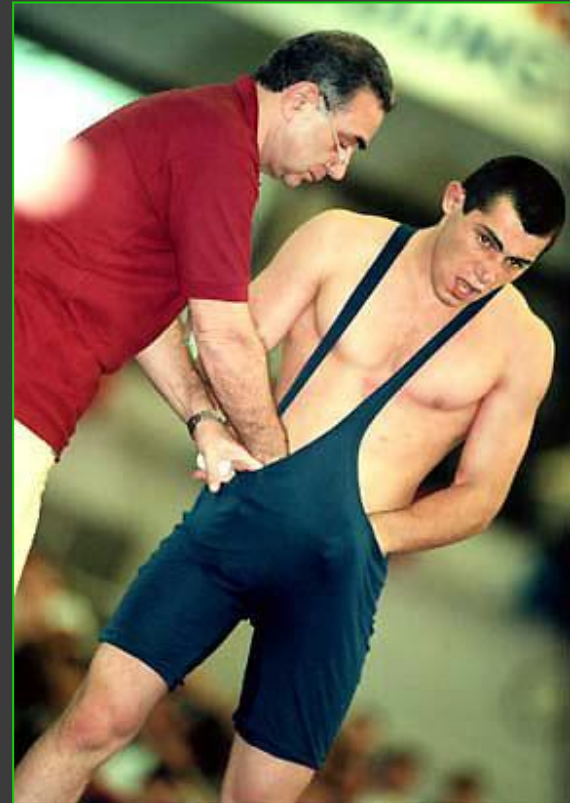
Patients with Impingement: Typical History

- **Location of Pain:**
 - Groin
 - Anteromedial thigh
 - “C-sign” □
- **Positional pain**
 - Pain with hip flexed/ IR
 - Lunges
 - Squats
 - Sitting
 - Stairs
 - Shoes, socks



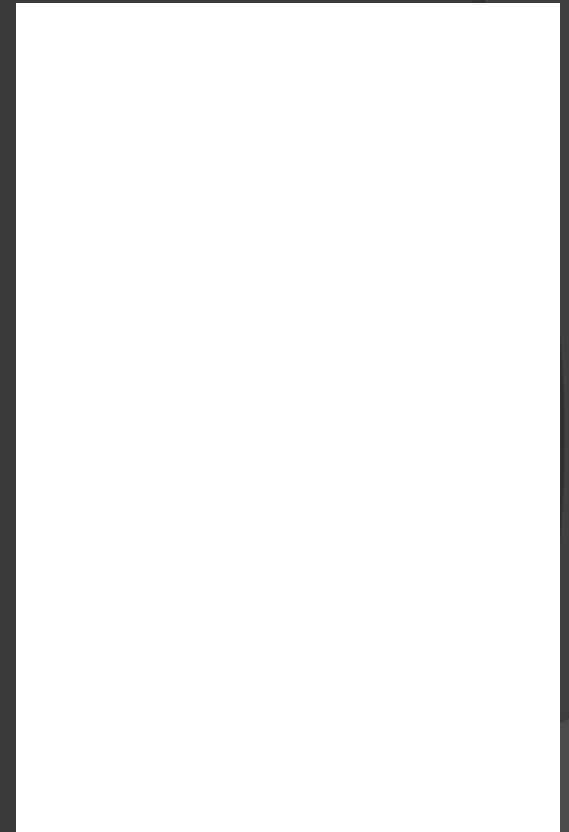
Physical Examination

- Difficult
- Many times inconclusive
- Many potential diagnoses



Physical Examination

- **Compare to opposite side!**
- **Tenderness to palpation**
 - Location
- **Rotation**
 - Sitting + laying down
 - ER – external rotation
 - IR – internal rotation
- **Straight leg raise**
 - Spine
- **Impingement**
 - Flexion, ADduction, IR □
- **Instability**
 - Supine ER in Neutral Flexion



Radiographs (X-rays): Critical to Interpret



Imaging

- AP Pelvis
- Frog leg
- Dunn 45 (CAM deformity)
- False Profile (AIIS)



Imaging

- **MRI if in doubt**
 - Arthrogram (inject dye)
 - Include both hips in some
 - Look at hip in multiple planes



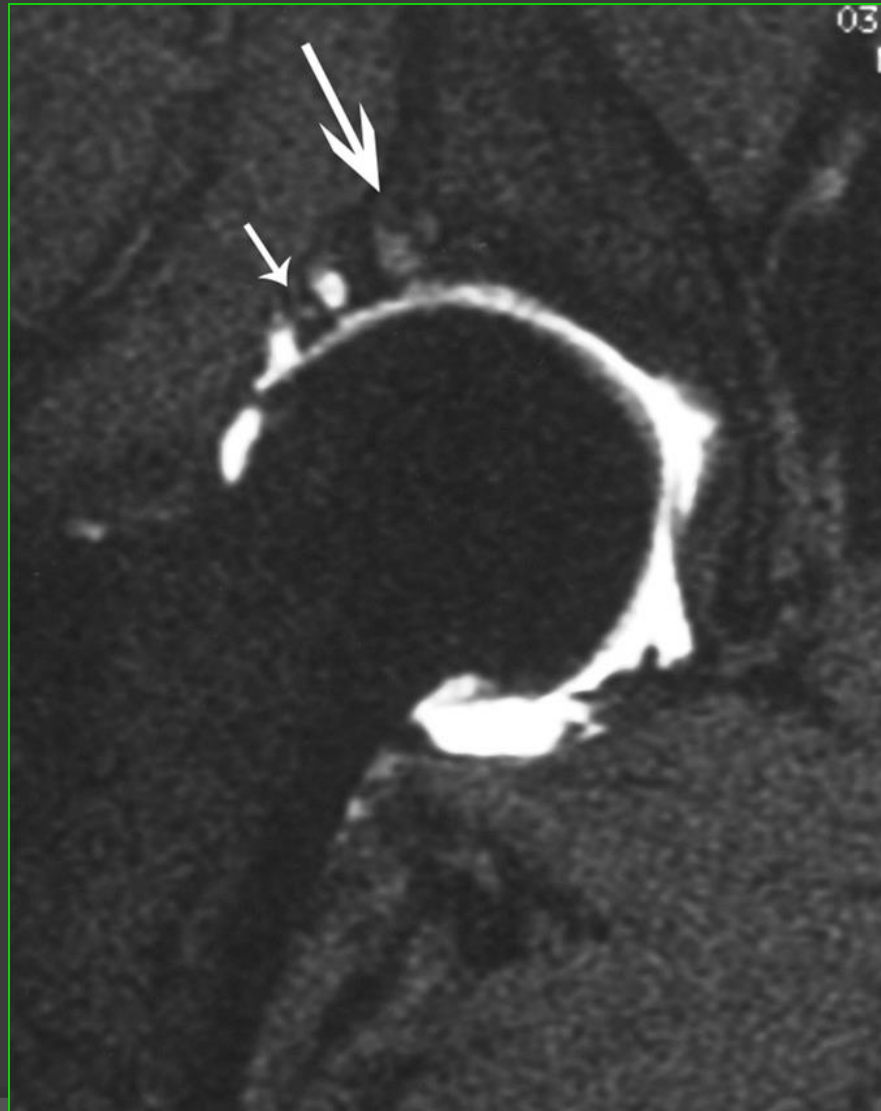
Imaging

- **Try to interpret yourself!**
- **Radiology interpretations are black and white**
 - **Subtle deformities**
 - **Various tear patterns/locations**

Xrays



MRI



Hip Impingement

- **Structural abnormality of joint**
- **Developmental vs environmental**
 - Acetabular (socket)
 - Femoral (ball)
- **Repetitive head-neck micro-trauma**
 - Labral tears
 - Acetabular cartilage injury
(Beck, CORR, 2004)



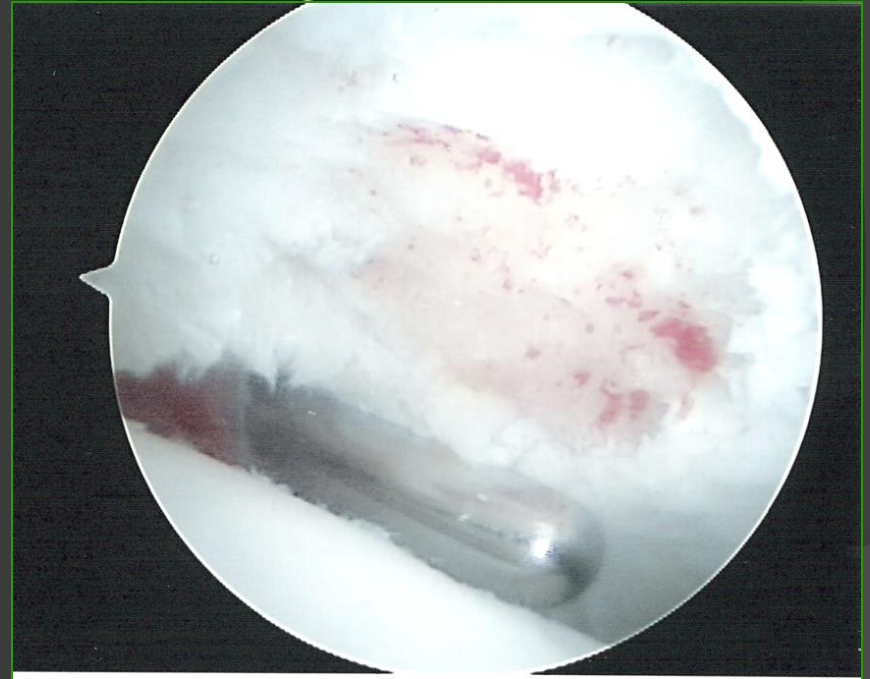
Impingement

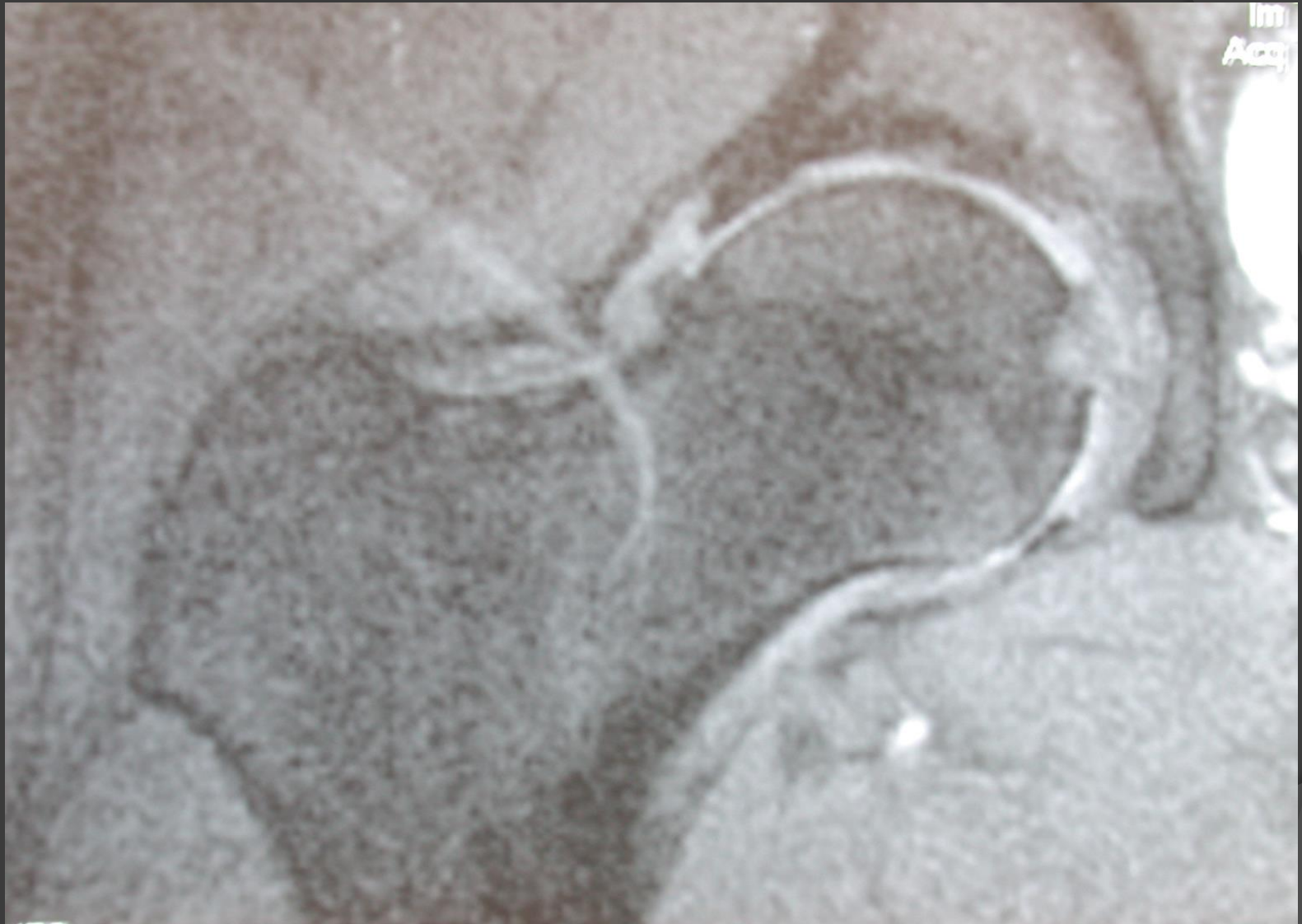
Femur (ball)

- ◎ **Cam impingement**
 - Altered head-neck offset
 - “pistol grip”

Acetabulum (socket)

- ◎ **Pincer impingement**
 - Acetabular “overcoverage”

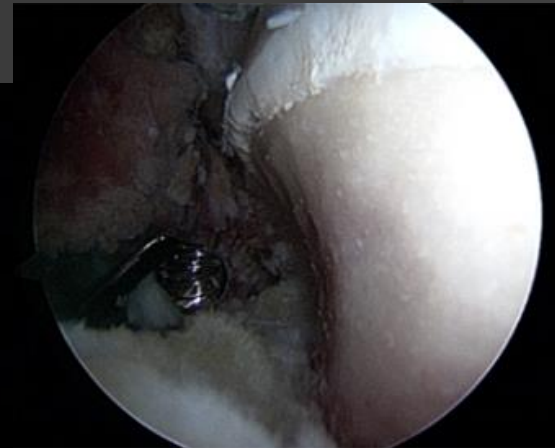




Treatment

- Start conservative (non-surgical)
 - Physical Therapy
 - address core weakness, hip abductors, pelvic tilt, stretch anterior hip
 - Anti-inflammatory medications
 - Activity modifications
- **Steroid injections**
 - Ultrasound guided (clinic) vs Xray guided (radiologist)
 - **Diagnostic** and therapeutic
- Surgery
 - NO ARTHRITIS

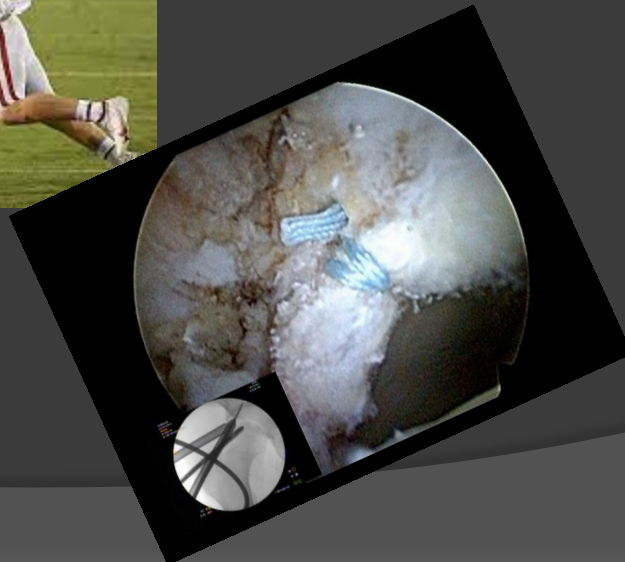
Case – C.H.



C.H. - postop



Summary



- Many possible diagnoses for pain around the hip
- Knowledge of Anatomy
- Thoughtful imaging analysis
- Stay current with education

Thank You!



Hip Impingement



Lauren Hasquet DPT, OCS, CSCS, CAFS



Conflict of Interest

BOC Approved Providers shall make public potential and actual conflicts of interest and financial gain associated with any programs, providers, program faculty or sponsors.

I am an employee of Ortho Montana and Athletic Medicine and Performance (AMP).
AMP is the sponsor of this conference.

Non Operative Treatment

- Physical Therapy
 - Find the impairments
 - Address core weakness, hip muscles, hip ROM, pelvic tilt
- Activity modifications



Post Surgical Treatment

Post-operative 1-7 days:

- **Goals:**

1. Protect healing tissue
2. Reduce pain and inflammation
3. Reduce risks of scar adhesions
4. Maintain ROM per guidelines
 - a. Flexion 90-105°, IR 20-30 °, ER 30-45 °, Abduction 30 °
5. Slow muscle atrophy

Initial Phase: 1-4 weeks:

Precautions:

1. No impact activities
2. Avoid pivoting/twisting on leg
3. Do **not** cross leg
4. Avoid low-sitting chairs
5. Avoid active straight leg raise
6. Unless indicated otherwise: 4 weeks postoperative-flat-foot weight-bearing (weight of the leg)
7. ROM: Do not push through pain or pinching at the hip
 - a. Flexion 90-105°, internal rotation 20-30 °, external rotation 30-45 °, abduction 30 °



Advancement Criteria to Phase II:

- 1. ROM within 75-80% normal limits**
- 2. Demonstration of quality glute med, glute max, and abdominal activation:**
 - a. 10 SL hip aBduction without pelvic rotation or TFL contribution**
 - b. 10 prone hip extension lifts with glute firing prior to hamstrings**
 - c. 10 repetitions of Sahrman level II abdominals**
- 3. Verbal pain rating <3/10**

Phase II: 5-8 weeks



• Precautions:

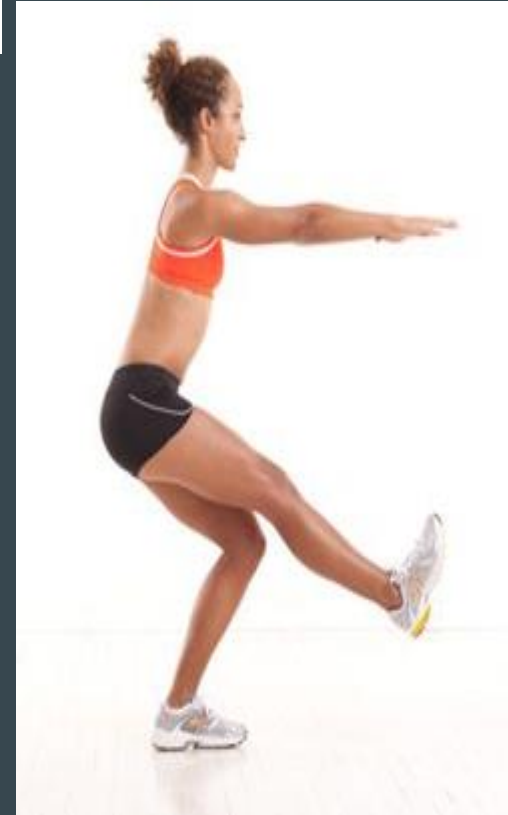
1. No impact activities
2. Avoid pivoting/twisting on leg
3. Avoid low-sitting chairs
4. Avoid hip flexor, adductor, piriformis irritation
5. No forced stretching/no pushing into pinching at the hip

Goals:

1. Progress to WBAT, normalize gait pattern
2. Protect healing tissue
3. Restore full ROM
4. Improve functional strength and endurance
5. Progress neuromuscular control, balance, proprioception

Advancement criteria to Phase III

1. No pain with ADLs
2. Full ROM
3. Normalized gait pattern
4. Squat: at 70° knee depth
5. Single leg stance
6. Hip abd, add, ext, and IR/ER strength of 4+/5
7. Hip flexor strength of 4/5
8. Step ups/down 10 reps of 8", demonstrating good neuromuscular control
9. Single Leg Squat x 10 to 70 deg



Phase III: 9-12 weeks

- **Precautions:**

1. **Avoid pivoting/twisting on leg**
2. **Avoid deep, weighted squats**
3. **Avoid hip flexor, adductor, piriformis irritation**
4. **No forced stretching/no pushing into pinching**

- **Goals:**

1. **Progress functional strength and endurance**
2. **Optimize neuromuscular control**
3. **Gradually introduce plyometric activities**

Advancement Criteria to Phase IV:

1. >90% symmetry strength testing all hip motions
2. <4cm anterior and <6cm lateral asymmetries on Y-Balance Test
3. Verbal pain scale <3/10 with activity
4. Side plank: 60 seconds



Phase IV: 12 wks

- Precautions:
 1. Avoid hip flexor irritation
 2. Avoid pinching of the hip
- Goals:
 1. Initiate sport-specific activities
 2. Progress plyometrics
 3. Initiate running program



Return-to-sport criteria: 16 wk -6 mo

1. >90% symmetry strength testing all hip motions
2. >90% symmetry all hop tests
 - a. Single-leg hop for distance
 - b. Triple cross-over hop for distance
 - c. Triple hop for distance
 - d. 6-meter timed hop
3. <4cm anterior and <6cm lateral asymmetries on Y-Balance Test
4. >90% HOS ADL score and >75% HOS sport subscale
5. Verbal pain scale <3/10 with activity
6. Demonstrate good control of sport-specific activities





THE CENTERS OF EXCELLENCE

ORTHO MONTANA

Thanks!

References

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